

in quarterly parts, the contents of each part being arranged under the following heads:—

1. Generalities and Statistics, Description of Apparatus and Machinery, Heat-production.
2. Dry Distillation of Heating and Lighting Materials, Sulphide of Carbon, Petroleum, Coal-gas, Wood-tar, Asphalte, &c.
3. Sulphur, Acids, Alkalis, Aluminium Salts, Borates, Chromates.
4. Oils and Fats, Resins, Glycerin, Volatile Oils, Lubricating Materials.
5. Sugar, Starch, Fermentation, Wine, Beer, Spirits, Vinegar.
6. Food, Meat and its Preparations, Milk and Dairy Produce, Flour and Baking.
7. Dye-stuffs, Dyeing and Calico-printing.
8. Tanning.
9. Matches and Explosives.
10. Glass, Earthenware, Cement, Plaster.
11. Metallurgy—Iron, Copper, Tin, Lead, Bismuth, Antimony, Nickel, Mercury, Silver, Gold, &c.
12. Smaller Industries—Oxalic Acid, Cellulose, Salicylic Acid, Tartaric Acid, Chloral Hydrate, Mineral Waters, Chloride of Zinc.

Detailed criticism of the immense amount of matter contained in the 900 pages of the volume is, of course, impossible. Suffice it to say that the whole has been compiled with great care; every available source of information appears to have been thoroughly ransacked; and the necessarily condensed descriptions of the several processes and products are supplemented by copious references to original papers. Lists of chemical patents taken out in Great Britain, America, France, Belgium, and Austro-Hungary, are also given at the end of each quarterly part, the whole extending to forty closely-printed pages.

In the possession of such a report of chemical industry as the one now under consideration, and of the admirable *Jahresbericht* of Dr. Wagner, the manufacturers of Germany are certainly fortunate; and when we consider the vast extent and importance of chemical manufactures in England and America, it is matter of surprise and regret that no similar work exists in the English language. Projects for such a work have, indeed, been started in this country, but their execution appears to be a problem for the future.

Southern Stellar Objects for Small Telescopes, between the Equator and 55° South Declination, with Observations made in the Punjab. By J. E. Gore, M.R.I.A., A.I.C.E., &c. (Lodiana, 1877.)

THIS small work is divided into two sections. The first contains objects arranged according to the constellations, and chiefly selected from Sir John Herschel's Cape volume, which are within the scope of telescopes of very ordinary capacity, including double stars, clusters and nebulae, with special reference to stars which may prove to be variable. The second section contains the more original work of the author, who was provided with telescopes 3 and 3·9 inches aperture, in the Punjab, and wholly relates to southern stars possibly variable, some new and noteworthy cases being adduced.

Mr. Gore appears to have made a useful comparison of Harding's "Atlas" with the sky, so far as relates to stars found in it, which do not occur in the great catalogue from the "Histoire Céleste" of Lalande, or are underlined in the "Atlas," and it is in such cases that he has met with the most decided evidence of variability. Amongst them we may note L. 1028, a star twenty minutes due north of L. 8951, one in R.A. about 4h. 58m. for 1880, N.P.D. $111^{\circ} 14'$, apparently variable from 6m. to 9m.; L. 19,662 from $4^{\circ} 5m.$ to $7m.$; L. 23,228; Oeltzen 17,670 (No. 31 in Mr. Gore's list), observed three times by Argelander, and estimated 5, 7, and $5\cdot6$, which is 6m. in

Harding, but not in Lalande or Heis; No. 37, or Oeltzen 20363, called "a fine ruby star" by Sir John Herschel, and $6\frac{1}{2}$, and found to be only $8\frac{1}{2}$ or 9m., and fiery red with a 3-inch refractor in July, 1875, and L. 43,239. Generally, the objects mentioned in the author's second section will deserve further examination.

There is frequent reference to the magnitudes assigned in Proctor's "Atlas," by the side of those given by such original authorities as Lacaille, Heis, or even Harding; this is a mistake, and is more calculated to mislead than to assist a judgment on the question of variability. The author of this Atlas distinctly states in his preface that he has followed the magnitudes of the British Association Catalogue except for stars in Sir John Herschel's list, which is a comparatively small one; the work is more of a popular description, and so far as we know may be useful to amateurs, but it is idle to quote the indications of this Atlas with those of Argelander or Heis, whose magnitudes are the results of actual comparison with the heavens. Probably after his clear reference to the source whence his magnitudes have been derived, no one will have been more surprised to find his work quoted as an authority in a question of change of brightness of a star than Mr. Proctor himself. We should hardly have referred to this point, were it not that others have made the same mistake as Mr. Gore.

There are many misprints in this small volume, which should be avoided in another edition.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

A New Nebula

ON November 14, the Rev. T. W. Webb discovered a small nebula, or nebulous star, in Cygnus. It is apparently identical with D.M. + 41, No. 4004, $8\cdot5m.$

$$1880 = 21h. 2m. 31s. + 41^{\circ} 45' 3''.$$

At Dunecht Observatory the object was seen, on November 22 and 23, to be approximately monochromatic, seen through passing clouds; about $5''$ diameter.

LINDSAY

Dunecht Observatory, November 24

Does Sargassum Vegetate in the Open Sea?

THE reply of Dr. Wild in NATURE, vol. xx. p. 578 to my query, does not satisfy me, for he partly cites old reports, that are, as I showed, mostly suspicious of being a mixture of the prevalent opinion since Columbus and observed facts.

If it has been stated formerly that pelagic varieties (?) multiply only by simple growth and subdivision, and a wide area covered with sea-weeds corresponding to the Sargasso Sea occurring in the North Pacific, I believe that is only a compilation. I crossed the Pacific Sargasso Sea (as it is printed on the charts) in December, 1874, from 140° W. long., 35° N. lat., to 174° W. long., 29° N. lat., and observed no Sargassum at all! But it is possible that the quantity differs in different years. I ask, therefore—and beg for personal observations only—has any one seen a difference in the quantity or density of floating Sargassum in different years, and in what degree or quantity has (1) brownish or olive-coloured, and (2) yellowish pale Sargassum been seen in several years?

A flowering branch with buds of any garden plant, if cut and put into water, does not wither suddenly, but sometimes opens continuous to the buds, and may even sprout, but never for a long time; but we never call such cut flowering branches put into a water-glass water plants. I take Sargassum to be analogical, and it should not be allowed to consider the dying broken Sargassum or Fucus, that swing in the open sea, as pelagic in habit, or as a living variety of the open sea.

If it has been stated that the last branches of floating Sargassum are paler, more delicate, and more active in their vitality; I believe that to be no real observation, but only a supposition, for the more delicate and more branched ends become certainly pale at first, and with the diminution of chlorophyll can never increase their vitality. Does any one know in what time the olive-coloured broken Sargassum gets pale, and if pale Sargassum does really sprout to some extent, which I doubt, how long it continues to sprout? and further, after what time do the dead round air-vesicles of Sargassum break off? I should wish these questions cleared up by personal observations.

Leipzig-Eutritzsch, Germany

OTTO KUNTZE

Remarkable Prediction of Cold

IN NATURE, vol. xxi. p. 48, in the Meteorological Notes, it is stated, on the authority of Mr. Glaisher, that the present unusually cold weather set in on October 27, 1878. You perhaps are not aware that this was predicted almost to the day by Prof. Piazzi Smyth in NATURE, vol. v. p. 317. In an article on Heat Waves he gives the dates of these phenomena as follows:—Years 1834'8, 1846'4, 1857'8, 1868'8, and 1880'0; the heat wave of 1880 to be preceded by a cold wave commencing 1878'8, which is, I need scarcely say, the end of October, 1878.

Dulwich, November 17

B. G. JENKINS

The Lizard

LAST August, while superintending the burning of some dry bush in my pasture, I was surprised to see a ground lizard (*Laerta agilis*) run up to the flames and stop on a bed of hot ashes. My little son who was with me endeavoured to turn it aside with a stick, but on his trying to do so, it darted into the fire and was soon consumed. This I thought at the time accidental, but later in the day we returned to the same spot, and in a few minutes a larger lizard of the same species deliberately ran up to the burning bush; it paused on the warm ashes wagging its tail to and fro, apparently enjoying the heat, when all of a sudden it darted into the flames, and like the first one was instantly a willing holocaust. I turned to the Negro, who was burning the bush, for explanation, but like most of his race he accepted the fact as a matter of course, remarking "lizard seem to love fire." My ideas went back to the legends of the salamander. The story of the French consul at Rhodes (M. Pothonier), who one day found his cook in a terrible fright thinking the "devil was in the fire," and when he looked into the bright flames, saw there a little animal with open mouth and palpitating throat, and on trying to secure it with the tongs, it ran into a heap of hot ashes. He secured it and gave it to Buffon, who found it to be a small lizard, whose feet and a portion of the body were half roasted. M. Pothonier first thought it was incombustible, having remained in the fire three minutes, but imagined that it might have been brought in with the fuel. Nicander, Dioscorides and Pliny, all allude to the fire-proof qualities of the "salamandra." Aristotle speaks of the salamandra's power of extinguishing fire with the copious secretion of saliva which it has the power of ejecting into the flames. As far as my own observation goes all lizards have the power of ejecting saliva. The Negroes have a dread of the croaking lizard's (*Gecko*) "spitting" at them. I do not believe that any Jamaica lizard has *poisonous* saliva, but that the saliva is deleterious, I am quite sure. That cats get "fits" from eating lizards is a well accepted fact, their hair falls out, and they become sick and droop, confirming the belief in the depilatory properties of the salamander's saliva. As Martial puts it (Lib. ii. Ep. lxi.):—

"Desine jam, Lalage, tristes ornare capillos,
Tangat et insanum nulla puella caput.
Hoc salamandra potet, vel sæva novacula nudet,
Ut digna speculo fiat imago tuo."

Before closing these jottings, I should like to correct an error in a recent work on Natural History, in which it is stated that "the *Iguana* is extinct in Jamaica." This is *not* the case. They are still to be found in numbers on the Cashew trees in the lowlands, especially St. Catherine's. I once had a long fight in trying to pull a large one out of a hole in a tree, by the tail. He won the battle "by the skin of his tail."

Monatree, St. Andrew, Jamaica, W.I.,

JASPER CARGILL

October 14

The "Hexameter," Πᾶσα δόσις ἀγαθή . . . κ.τ.λ.

IT is surely no argument against Prof. Clerk Maxwell's notion, that in the epistle (James i. 17) the enclitic particle *τε* is omitted. Read, of course,

Πᾶσα δόσις τ' ἀγαθή καὶ πᾶν δῶρημα τέλειον,

and the verse is perfect. The practice of omitting a word (or part of a word) necessary to the scansion of a verse is all too common with prosists quoting poetry. I give one example from an English writer. Robert Greene, the earliest to allude to Shakespeare, in his "Groatworth of Wit bought with a Million of Repentance" (1692), quotes, just as if they were prose, six lines from a contemporary poet; and in so doing inserts two words and omits two and part of another! He writes, as prose, omitting all that I here give in italics—

"Then only Tyrants should possess the earth,
Who striving to exceed in tyranny,
Should each to other be a slaughter-man;
Untill the mightiest outliving all,
One stroke were left for Death, that in one age
Man's life should end."

I am pleased to learn from the obituary notice in NATURE of that great man, that Clerk Maxwell's thoughts during his illness reverted to a play of Shakespeare's; but had he less profitably thought of Greene's assault on Shakespeare, and had it struck him that the foregoing must be in heroic verse, what would be thought of the critic who should object to this, that the first and fourth of these so-called verses are, by one syllable each, too short?

Athenæum Club, November 22

C. M. INGLEBY

It cannot be supposed that our translators meant to compose a verse when they wrote the line which Longfellow transfers bodily into his "Evangeline":—

"Husbands, love your wives, and be not bitter against them."

So the metrical cadence here may be quite accidental. Still I cannot think that the defect of quantity in the final syllable of *δόσις* is fatal to the idea that it may be a line from an early Christian doxology: especially when we suppose it written in Alexandrian or Hellenistic Greek. The arsis, or natural stress of the voice, would cover up the defect, especially in chanting; and it would scarcely be a defect at all to non-classical ears. The process which rapidly from the Christian era substituted stress or accent, as we now understand it, for quantity, seems to have been greatly accelerated by the hymns of the Church. In any case every trace of such quotations is of great interest to every student of the New Testament.

HENRY CECIL

Bregner, Bournemouth, November 22

Unconscious Cerebration

I HAVE delayed noticing a communication, headed Unconscious Impressions, by Mr. C. J. Monro, in NATURE, vol. xx. p. 426. This refers to what Dr. Carpenter calls Unconscious Cerebration, but which when I discovered it likewise, I called Unconscious Thought.

With Mr. Monro's conclusion that an unconscious impression is stronger than a conscious one, his statement does not impress me, nor is it supported by my own experience.

My attention had been recalled to the subject by observing children, and in their actions it appears to me we may find the beginning of the process of unconscious cerebration. So far it appears that conscious cerebration precedes and lays the foundation for the unconscious process. When a baby is practising, as for instance in handling an object, its attention is closely given in the early stages and in its various experiments, and it is only after a time that the performance becomes purely mechanical.

The same is to be noted of young animals.

Hence I conclude that as various practices become habitual, and, as some style them, instinctive, conscious cerebration ceases to be employed. Thus is formed the habit of only regarding some objects consciously, and necessarily that of regarding others without cerebration. Thus I treat unconscious cerebrations as becoming habitual.

HYDE CLARKE

32, St. George's Square, S.W., November 20

Mr. Thomas Bolton's Natural History Discoveries

I ONLY became aware on Saturday evening last, the 15th inst., of the paragraph kindly inserted by Prof. E. Ray Lankester,